

## Focus . . . Prevalence and Characteristics of Women Who Breastfeed in Missouri

Breastfeeding is strongly recommended as the optimal way of nurturing infants by the American Dietetic Association, the American Academy of Pediatrics, the American College of Obstetricians and Gynecologists, the American Academy of Family Physicians, the Institute of Medicine of the National Academy of Sciences, and the World Health Organization among many other professional organizations. This is because it satisfies infants' nutritional needs exclusively for the first 6 months of life and with complementary foods thereafter, promotes immunological development of the gastrointestinal tract, helps to protect the infant from infection, promotes maternal-neonatal bonding, helps the mother return to the prepregnancy state and is basically free 1-3.

In order to obtain an indication of the prevalence and characteristics of women who breast-feed in Missouri, a follow-back survey of women having live births in August 1995 was completed. A random sample of 1,500 mothers having live births in August 1995 was drawn from the pool of all Missouri resident live births surviving as of January 1996. Surveys were initially mailed in February 1996 with a postcard and two additional follow-up survey mailings completed. Also, telephone follow-up was attempted for the non-responders. This effort resulted in a response rate of 64.3 percent (965 of 1,500) overall, with corresponding rates of 68.2 and 44.9 percent for white and black/other races, respectively. Table 1 shows the highest response rates were among married women, women ages 25 and over, women with 13 or more years of schooling, white and St. Louis County residents. The lowest response rates were noted for women with less than 12 years of education, and blacks.

In order to improve the precision of the sample estimates, post-stratification was done using the known population distribution by race (white/unknown versus black/other races) and education (less than 12, 12, and 13 or more years) for mothers having August 1995 surviving live births. Using this approach can partly reduce non-response bias for differences in breastfeeding between the respondents and non-respondents in each race-education stratum, inasmuch as the non-responders being the same as those who responded is assumed to be true.

Table 2 shows that just over half of mothers surveyed reported that during pregnancy they knew they would breastfeed; whereas, two-thirds noted they knew or might breast-feed. Just 57.0 percent of the mothers breast-fed at hospital at birth, which is 24 percent below the National Healthy People 2000 breast-feeding goal of 75 percent. One-half reported that they just breast-fed their newborn when first born and nearly 60 percent noted they either breast-fed or breast-fed and used formula. By two weeks of age these rates had declined to 42.9 percent for breast-fed only and 51.1 percent for breast-fed and used formula. Breastfeeding declined further to 25.8 percent at age five months. This rate is just over half of Healthy People 2000 goal of 50 percent.

Table 3 presents the results of breast-feeding by selected characteristics. Breast-feeding increases with age and education for both time-first-fed and at five months of age. Around three-fourths of the women ages 35 and over or education greater than 12 years breast-fed or breast-fed and used formula as their means of first feeding their infants. The prevalence of breast-feeding declined to one-third by the infants' fifth month of age for women ages 35 and over or education greater than 12 years. This contrasts with women under age 20 or education less than 12 years, where only 37.2 and 32.6 percent respectively, breast-fed or breast-fed and used formula for their newborn infants. By the fifth month only one-in-eight women under age 20 were breast-feeding and only one-in-six women with less than a high school education were breastfeeding.

Prevalence of less than 50 percent for breastfed or breastfed and formula fed for how first-fed was noted for: Food Stamps participants, Medicaid participants, mother smoking during pregnancy and mothers having unintended pregnancies in ascending order of prevalence. Prevalence of less than 20 percent for breast-feeding of infants at age five months was noted for not married mothers, Food Stamps participants, mothers smoking during pregnancy, Medicaid participants, blacks, WIC participants and mothers having unintended pregnancies in ascending order of prevalence.

The only group that had reached the Healthy People 2000 breast-feeding at birth goal was mothers with more than a high school education with mothers ages 35 and over coming close (74.2 percent). However, no group came close to the Healthy People 2000 breastfeeding goal of 50 percent for 5-6 months postpartum.

The survey inquired about reasons for not breast-feeding and reasons stopped. Over 68 percent (95 percent Confidence Intervals (CI) 62.8-74.2) of the mothers not breast-feeding at all noted they did not want to, or felt it was better to bottle feed, or noted it takes too much time; with the majority noting they did not want to. Nearly 29 percent (CI 20.5-37.1) noted they had to go to work or school, and 5.5 percent (CI 0-14.7) noted they were taking medicine (items are not mutually exclusive).

The most prevalent reasons noted for quitting breast-feeding were "I didn't feel I had enough milk" (30.3 percent, CI 23.4-37.2), "I had to go to work or school" (27.6 percent, CI 20.7-34.5), "I tried but my baby didn't breast-feed very well" (21.8 percent, CI 14.5-29.1), "I felt it was the right time to stop" (16.9 percent, CI 9.4-24.4), and "I didn't want to keep breast-feeding" (11.8 percent, 3.6-20.0). Note that the above items are not mutually exclusive.

The survey also inquired about things happening at the hospital of birth that might foster or hinder breast-feeding. Eighty-one percent of the women received information on breast-feeding from the hospital staff (89.1 percent for those breast-feeding and 69.5 percent for those not). Just over one-third of the women had their babies in their hospital room both day and night (40.4 percent and 26.1 percent respectively for breast-feeder and not). Of the women breastfeeding at their infant's birth, 71.9 percent noted that hospital staff helped them learn how to breastfeed, 76.1 percent noted that hospital staff told them to breastfeed whenever their babies wanted, 73.8 percent noted that the hospital had given them a telephone number to call for help about breastfeeding, and 30.5 percent checked that they had had a follow-up call from a breast-feeding specialist. Just over 80 percent of the women noted that the hospital gave them a gift pack with formula; with 72.4 percent of breast-feeding mothers receiving formula.

### Summary

For the study period, over 40 percent of mothers noted they did not breast-feed and over two-thirds of these women noted that they just did not want to breast-feed. These results on ever breast-feeding are very similar to those obtained for the United States by the Ross Laboratories Mothers' Survey for 1995. This shows some strong personal biases against breastfeeding which along with many work-sites not being conducive to breast-feeding, presents large obstacles for society to reach the Healthy People 2000 goals.

Educational efforts on breastfeeding are needed on many fronts before one can expect a significant change in infant feeding methods. Over 30 percent of the mothers not breastfeeding received no information on breast-feeding at the hospital where they delivered. This may indicate a large missed opportunity for patient education.

**References:**

- 1Lawrence R., *Breastfeeding: A Guide for the Medical Profession ed.5*, St. Louis, MO: C.V. Mosby 1998.
- 2Goldman, A.S. et.al. "Immunologic factors in human milk during the first year of lactation." *Journal of Pediatrics* 100(4):563-567, 1982.
- 3Policy Statement-Breastfeeding and the Use of Human Milk, American Academy of Pediatrics, *Pediatrics* Vol 100 No 6 Dec 1997 pp. 1035-1039.
- 4DHHS. *Healthy People 2000 - National Health Promotion and Disease Prevention Objectives*. DHHS Publication No. (PHS) 91-50212, Obj. 14.9, 379-380.
- 5Ryan A.S. "The Resurgence of Breastfeeding in the United States". *Pediatrics* 99 (4): E12 (Apr 1, 1997).

**Table 1**

**Response Rate by Selected Characteristics: Missouri August 1995  
Live Birth Follow-Back Survey**

	<i>Response Number</i>	<i>Response Percent</i>	<i>Rate</i>
<i>Marital Status</i>			
Not Married	241	25.0	49.6
Married	724	75.0	71.4
<i>Age</i>			
<20	106	10.9	53.5
20-24	244	25.3	55.4
25-34	506	52.4	70.0
35 and older	109	11.3	78.4
<i>Education</i>			
Less than 12	128	13.2	46.7
12	335	34.7	62.4
13 or more	495	51.3	73.2
<i>Race</i>			
White	854	88.5	68.2
Black	100	10.4	44.4
All Other	9	0.9	45.0
<i>Resident County</i>			
St. Louis City	72	7.5	54.6
St. Louis County	173	17.9	69.8
Jackson	114	11.8	58.2
Rest of Missouri	606	62.8	65.6
Total	965	100.0	64.3

**Table 2**

**Breast-Feeding by Infant Age Infant Feeding/Family Planning Follow Back Survey:**

**Missouri Resident Data August 1995**

<i>All Races</i>	<i>All Races</i>		
<i>Infant Age</i>	<i>Number</i>	<i>Percent</i>	<i>95%CI**</i>
During pregnancy			
Knew would breastfeed	511	50.5	(47.6-53.4)
Knew or might breastfeed	664	66.8	(64.1-69.5)
Breastfed at hospital of birth	580	57.0	(54.1-59.9)
How fed when first born			
Breast-fed only	512	50.1	(47.2-53.0)
Breastfed only or breastfed and used formula	597	58.9	(56.0-61.8)
How fed at age two weeks			
Breast-fed only	439	42.9	(39.2-46.6)
Breast-fed or breast-fed and used formula	522	51.1	(48.2-54.0)
Breast-fed only or breast-fed and used formula at age five months	261	25.8	(23.3-28.3)
n	965		
N	6,243		

n=Responses, N=Mother delivering live birth August 1995 with infant surviving as of September 1996.

(#) Refers to survey question number.

\*Rates are post-stratified to the August 1995 population distribution of surviving live births on race (white vs. non-white) and mother education (<12 years, 12 and 13 plus).

\*\*95% Confidence Interval

Healthy People 2000 Breastfeeding Goals: Early Postpartum (@birth site): 75%

Age 5-6 months: 50%

**Table 3**

**Breast-feeding\* by Infant Age by Selected Characteristics:  
Missouri August 1995 Live Birth Follow-Back Survey**

	<i>First Fed</i>		<i>Five Months</i>	
	<i>Breastfed Only</i>	<i>Breastfed Only or Breastfed and Used Formula</i>	<i>Breastfed</i>	<i>Weighted</i>

	<i>Percent</i>	<i>95% CI</i>		<i>Percent</i>	<i>95% CI</i>		<i>Percent</i>	<i>95% CI</i>	
Age less than 20	26.5	34.4-37.2		37.2	28.6-45.8		12.0	6.2-17.8	878
20-24	43.4	37.6-49.2		48.5	42.7-54.3		19.0	14.4-23.6	1,636
25-34	56.9	53.0-60.8		67.3	63.6-71.0		31.7	28.0-35.4	3,089
35 and over	66.8	58.8-74.8		74.1	66.6-81.6		33.5	25.5-41.5	649
Education less than 12	26.7	19.5-33.9		32.6	24.9-40.3		15.5	9.6-21.4	1,189
12	43.0	38.2-47.8		51.6	46.7-56.5		20.5	16.6-24.4	2,208
13 and over	65.4	61.6-69.2		75.5	72.1-78.9		34.2	30.4-38.0	2,856
Not married	26.9	21.7-32.1	34.7		29.1-40.3		12.9	8.9-16.9	1,841
Married	59.8	56.5-63.1	69.0		65.9-72.1		31.2	28.1-34.3	4,412
First born child	49.9	45.4-54.4		61.1	56.7-65.5		23.3	19.5-27.1	2,630
Second or later born child	50.3	46.5-54.1		57.3	53.6-61.0		27.7	24.3-31.1	3,623
Major metro	51.7	47.8-55.6		59.8	56.0-63.6		26.4	22.9-29.9	3,484
Minor metro	54.7	48.0-61.4		65.7	59.3-72.1		27.3	21.3-33.3	1,118
Rural	43.6	38.0-49.2		52.4	46.8-58.0		23.5	18.7-28.3	1,652
Black	28.1	18.9-36.4		38.8	29.8-47.8		16.5	9.7-23.3	921
White and all other	53.9	50.9-56.4		62.3	59.3-65.3		27.4	24.7-30.1	5,332
Smoke	37.3	30.4-44.2		43.9	36.9-50.9		14.3	9.3-19.3	1,119
Not smoke	53.1	49.9-56.3		62.3	59.2-65.4		28.6	25.7-31.5	5,082
Inadequate prenatal care	39.5	28.9-50.1		46.9	36.1-57.7		22.0	13.0-31.0	540

Adequate prenatal care	51.2	48.1-54.3	60.0	57.0-63.0	26.6	23.9-29.3	5,495
WIC	33.0	28.3-37.7	41.5	36.6-46.5	16.8	13.0-20.6	2,388
Not on WIC	60.4	56.8-64.0	69.4	66.0-72.8	31.0	27.6-34.4	3,673
Medicaid	33.7	28.8-38.6	42.2	37.0-47.4	16.4	12.5-20.3	2,281
Not on Medicaid	59.3	55.8-62.8	68.2	64.9-71.5	30.9	27.6-34.2	3,780
Food stamps	26.6	19.7-33.5	33.7	26.3-41.1	14.2	8.7-19.7	1,075
Not on food stamps	54.7	51.5-57.9	63.8	60.7-66.9	27.9	25.1-30.7	4,980
Unintended pregnancy	40.2	32.9-47.5	49.6	42.9-56.3	19.7	10.6-28.8	2,368
Intended	55.6	50.8-60.4	64.0	59.7-68.3	28.9	22.8-35.0	3,648
Total	50.1	47.2-53.0	58.9	56.0-61.8	25.8	23.3-28.3	6,253

\*Percents are post-stratified to the August 1995 population distribution of surviving live births on maternal race (white vs. non-white) and mother education (>12 years, 12 and 13 plus).

## **Provisional Vital Statistics for August 1999**

**Live births** increased in August, but the birth rate decreased, reflecting irregular reporting periods.

Cumulative births for the 8- and 12-month periods ending with August also show increases. For the first 8 months of 1999 births increased by 1.8 percent, from 48,947 to 49,812.

**Deaths** decreased in August as 4,443 Missourians died compared with 4,530 one year earlier. However, cumulative births for the 8- and 12-month periods ending with August both show increases.

The **Natural increase** in August was 1,516 (5,959 births minus 4,443 deaths) for a rate of 3.1 per 1,000 population.

**Marriages** increased for all three time periods shown below, a reversal of recent trends.

**Dissolutions of marriage** increased in August, but decreased for the cumulative 8- and 12-month periods ending with August.

**Infant deaths** increased slightly in August from 40 to 43, but decreased for the cumulative 8- and 12-month periods ending with August. For January-August the infant death rate decreased from 8.4 to 7.5 per 1,000 live births.

## PROVISIONAL RESIDENT VITAL STATISTICS FOR THE STATE OF MISSOURI

	August				Jan.- Aug. cumulative				12 months ending with August				
<u>Item</u>	<u>Number</u>	<u>Rate*</u>	<u>Number</u>	<u>Rate*</u>	<u>Number</u>	<u>Rate*</u>	<u>Number</u>	<u>Rate*</u>	<u>Number</u>	<u>Rate*</u>	<u>Number</u>	<u>Rate*</u>	
1998	1999	1998	1999	1998	1999	1998	1999	1998	1998	1999	1997	1998	1999

<b>Live Births</b>	5,908	5,959	12.4	12.0	48,947	49,812	13.5	13.6	74,385	76,517	13.5	13.7	14.0
<b>Deaths</b>	4,530	4,443	9.5	9.0	35,971	37,262	9.9	10.2	53,564	54,670	10.2	9.9	10.0
<b>Natural increase</b>	1,378	1,516	2.9	3.1	12,976	12,550	3.6	3.4	20,821	21,847	3.4	3.8	4.0
<b>Marriages</b>	4,546	5,774	9.5	11.6	29,375	30,166	8.1	8.3	43,351	44,476	8.3	8.0	8.1
<b>Dissolutions</b>	2,126	2,328	4.5	4.7	16,916	16,608	4.7	4.5	25,545	24,997	4.7	4.7	4.6
<b>Infant deaths</b>	40	43	6.8	7.2	411	375	8.4	7.5	584	561	8.2	7.9	7.3
<b>Population base (in thousands)</b>	...	...	5,439	5,470	...	...	5,439	5,470	...	...	5,386	5,423	5,454

\*Rates for live births, deaths, natural increase, marriages and dissolutions are computed on the number per 1,000 estimated population. The infant death rate is based on the number of infant deaths per 1,000 live births. Rates are adjusted to account for varying lengths of monthly reporting periods.

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